HW-G-15-002

EQ-001

EQ-012

UNUSUAL OCCURRENCE REPORT

Contractor: Westinghouse Hanford Company (WHC)

Report Number: WHC-UO-89-044-TF-07
Related CRT: WHC-C-87-008-TF-01
Related EFS: TF-EFS-89-076

Status/Date of Report: 08/31/89 Initial: X Interim:

Date of Event/Occurrence: 08/16/89*

Time of Event/Occurrence: 1100 hours

*Declared a UO on 8/21/89.

1. Division/Department or Project:

   Defense Waste Management Division/Tank Farm Operations

2. Facility, System, and/or Equipment:

   The 241-C Tank Farm is comprised of twelve 500,000-gallon single-shell tanks and four 55,000-gallon single-shell tanks. Eight of the tanks are partially isolated and eight tanks are isolated.

3. Subject of Event/Occurrence:

   Vapor was released in 241-C Tank Farm and inhaled by an Radiation Protection Technician.

4. Apparent Cause: Design P Material ___ Personnel ___
   Procedure ___ Other ___

   Design: Ventilation system (breather filters) needs to be evaluated to determine if all vapors released from the tanks are within acceptable limits.

5. Description of Event/Occurrence:

   On August 16, 1989, a Radiation Protection Technologist was performing routine work in 241-C Tank Farm. While walking in the farm along the southeast fence line (at 1100 hours) the employee briefly noticed a musty smell. The employee immediately held his breath and continued upwind (northeast) until he was past the C Farm tanks. Upon exiting the farm, the employee experienced a headache and nausea. At approximately 1115 hours, the employee reported to first aid and was administered oxygen. The employee was released from first aid and told to report to a doctor at HEHF for further evaluation. The employee was examined by an HEHF doctor and

5. Description of Event/Occurrence (Contd.)

released to go home. Later that evening he experienced another headache and went to Kadlec for further evaluation. The employee was released from Kadlec following an examination and returned to work the following day.

Since the issuance of Critique Report WHC-C-87-008-TF-01, two incidents were reported where employees reported smelling the unidentified odor in 241-C Tank Farm. One employee reported the smell to his manager and first aid on January 6, 1989. No first aid was administered and the employee returned to work. The second incident was the August 16, 1989, incident. Results of vapor space sampling (non-equilibrium conditions) indicate injurious vapor was ammonia.

6. Operating Conditions of Facility at Time of Event/Occurrence:

The 241-C Farm tanks were removed from service in 1979. Each tank contains some drainable liquids and salt cake. Tanks 105 and 106-C are actively exhausted by a portable 1000 cfm exhauster. The remaining tanks are passively filtered through breather filters. Tank 103-C breather filter was valved off on August 8, 1989, until a procedure for DOP testing could be issued and the breather filter DOP tested. Vapors in 103-C were being filtered through the 102-C breather filter via cascading lines between the tanks.

7. Immediate Evaluation:

Preliminary investigation and review of Critique Report WHC-C-87-008-TF-01 indicates that the vapors inhaled may have been released from Tank 102-C.

8. Immediate Action Taken and Results:

a.	Notified WHC Management, Nuclear Safety, Industrial Safety, media relations, and DOE-RL.	Complete 08/16/89
b.	Air sampling was performed in the general area the vapors were inhaled, the exhauster area and around the 102 and 103-C breather filters. The samples were taken with Drager Detector Tubes and showed no abnormal conditions.	Complete 08/16/89
c.	Additional samples were taken near the 102-C breather filter and sent to 222-S labs for analysis.	Complete 08/16/89
d.	241-C Tank Farm was placed on combination chemical cartridge full-face respirator.	Complete 08/16/89
e.	Switched to supplied air respirators as an added precaution.	Complete 08/17/89

8. Immediate Action Taken and Results (Contd.)

f. Employee meeting with all Tank Farm personnel was held to communicate actions and concerns with the 241-C farm vapor release. — Complete 08/21/89

g. Additional C Farm entry controls of a sign-in and out log and the buddy system were implemented for entry. — Complete 08/23/89

9. Is Further Evaluation and/or Corrective Action Necessary? Yes X No ___

If Yes, Before Further Operation? Yes ___ No X

10. Corrective Action Taken:

See 8 above.

Corrective Action Recommended:

1a. Sample Tanks 102 and 103-C vapor space under equilibrium in-tank conditions to obtain the maximum airborne gas/vapor concentrations.

Action: Tank Farm Operations Engineering
Tank Farm Plant Engineering — ECD: 09/15/89

2b. Identify SST's that contain waste types that are similar to tanks 102 and 103-C.

Action: Single-Shell Tank Process Engineering
(Letter will be issued by 9/15/89) — ECD: 09/15/89

3c. Perform a detailed analysis and evaluation of 102 and 103-C vapor space chemical concentrations.

c.1. Upon completion of sampling, provide approval to implement immediate engineered controls on tank 103-C (See 10.d)

Action: Tank Farm Plant Engineering
Single-Shell Tank Process Engineering — ECD: 09/29/89

c.2. Perform detailed analysis and evaluation and issue report.

Action: Tank Farm Plant Engineering — ECD: 10/29/89

4d. Provide engineered controls on tank 103-C (upon completion of sampling per c.1) as required to maintain emissions within safety limits.

Corrective Action Recommended (Contd.)

Action: Single-Shell Tank Process Engineering ECD: 09/30/89

e. Implement monitoring and/or sampling in C tank farm as appropriate based on vapor sample results.

Action: Industrial Hygiene and Safety ECD: 10/30/89

f. Perform and document a root cause analysis of the event.

Action: Single-Shell Process Engineering ECD: 11/15/89

g. Issue interim U.O. with corrective actions based on results from root cause analysis.

Action: Tank Farm Operations ECD: 11/30/89

11. Programmatic/Project Cost and Schedule Impact:

Total cost and schedule impacts are unknown at this time.

12. Impact Upon National Codes and Standards, Including NE Standards:

None

13. Similar Unusual Occurrence Report Numbers:

None

14. Signatures:

Originator: _____ Date: 08/30/89
Manager, Tank Farm Operations

Approved By: _____ Date: 8/30/89
Manager, Tank Farms

Approved By: _____ Date: 8/30/89
Manager, Single-Shell Tank Process Engineering

Approved By: _____ Date: 8/31/89
Manager, Single-Shell Tank Technology

Approved By: _____ Date: 8/30/89
Manager, Industrial Safety

Approved By: _____ Date: 8-31-89
Manager, Nuclear Safety

Approved By: _____ Date: 8/31/89
Manager, Waste Management and Site Support
Quality Assurance

Approved By: _____ Date: 9/8/89
Manager, Defense Waste Management Division

Review for Classification: Classified _____ Unclassified X

_____ Date: 8/30/89

DOES NOT CONTAIN CLASSIFIED OR
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

September 18, 1989

8955101

Mr. R. E. Gerton
Waste Management Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

INITIAL UNUSUAL OCCURRENCE REPORT, WHC-UO-89-044-TF-07

The attached Unusual Occurrence Report "Inhalation of Vapor by Radiation Protection Technologist (RPT) at 241-C" documents an event where a Westinghouse Hanford Company (WHC) RPT was performing routine work in 241-C tank farm and inhaled a vapor.

Review of the event indicates that public health and safety was not affected.

This report has undergone a classification and Unclassification Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

HFD

H. F. Daugherty, Manager
Defense Waste Management Division

eet

Attachment

DOE-RL - G. J. Bracken
A. W. Kellogg (w/o attachments)
A. J. Rizzo

RECEIVED BY

SEP 20 RECD

The results of this review determined that positive compliance could not be verified for nine of the OSRs, as written. A summary of these OSRs follows:

a) Audits - Three of the SARs (204-AR, Single Shell Tank Stabilization, and Aging Waste Facility) specify audits be performed at specific intervals to determine compliance with OSRs. Audits were not performed in strict compliance with the requirements of the specific OSR.

b) Review of Criticality Prevention Specifications (CPS) - The OSR for Saltwell Receivers requires that CPSs for Saltwell Receivers be reviewed every two years (not to exceed 30 months) for continued adequacy and applicability. The CPS for 244-TX and 244-S has not been formally reviewed since 1980. The CPS for 244-BX has not been reviewed since 1983.

c) Freeze Protection of Crib Vents - The OSR for UO_3 Crib and the OSR for the A 37-2 Crib state that "clearance of vents shall be maintained during freezing weather. This clearance may be accomplished by the temporary use of heat tapes or other methods deemed suitable."

No indication of vent blockage has been detected during surveillance, although no action has been taken to use heat tape or other like methods.

d) Suppression of Biota in 216-A-37-2 Crib and U-14 Ditch - The OSR for the 216-A 37-2 Crib and the OSR for the U-14 ditch require that long rooted plants shall be deterred from growing in these areas.

Although this area has been subjected to semi-annual spraying of herbicides, vegetation is growing in both areas.

e) Tank Pressurization - Aging Waste Facility - The OSR for this facility states that waste tanks shall not discharge radioactive materials to the atmosphere at concentrations greater than concentration guides listed in RHO-MA-139, Table 1 (WHC-CM-7-5).

Results of samples taken in October 1986 measured riser and vapor space concentrations greater than RHO-MA-139 Table 1 values (WHC-CM-7-5). If an aging waste tank should lose vacuum there is no monitoring instrumentation on the exhaust to indicate release concentrations.

During calendar year 1986, failures of the aging waste facility ventilation system caused one or more aging waste tanks to pressurize to slightly above atmosphere pressure on five different occasions. In each case, the appropriate recovery plan was implemented.

UNUSUAL OCCURRENCE REPORT
(CONTINUED)

The Occurrences discussed in paragraph 5a thru e above included:

[X] Safety Limit violation

[X] Design Feature not provided or implemented

[X] OSR recovery not implemented

[ ] Not OSR related

6. Operating Conditions of Facility at Time of Occurrence:

All facilities operating normally.

7. Immediate Evaluation:

A detailed review of all Tank Farm Facility OSRs revealed that positive compliance could not be verified for nine OSRs. An analysis of the inability to prove positive compliance with these nine OSRs determined that in no case was the Safety of Operations compromised.

These conditions were originally identified in December of 1986 and UO 86-68 declared. This UO 86-68 was cancelled until a complete evaluation could be completed. This UO documents the results of the complete evaluation.

8. Immediate Action Taken and Results:

Items 5a through 5c have been determined to be OSRs which do not meet the new criteria for Operational Safety Requirements. Waste Management Processing Engineering has formally requested the Safety Analysis Unit to delete these OSRs (reference: letter, G. L. Dunford to Greg Jones (J. P. Hinckley now residing), subject "Operational Safety Requirements Deletion," dated December 18, 1986.)

Item 5b - Criticality Prevention Specifications Review

The Criticality Prevention Specifications for 244-TX, 244-S and 244-BX have been reviewed by Criticality Engineering and Analysis and are acceptable and still applicable without change. No further action is required. (Reference: Letter, R. D. Carter to G. L. Dunford, Subject "Biennial Review of CPS-T-149-00060 and CPS-T-149-00061", dated December 18, 1986.)

Item 5d - Suppression of Biota

The 200/600 Areas Environmental Protection Section has evaluated the conditions in the U-14 ditch. At the present time, radiological survey records for this site do not contain any analysis. The 200/600 Areas Environmental Protection Section has recommended taking additional plant samples during the growing season. Further study on contamination potential, herbicide application and stabilization is required.

Item 5e - Tank Pressurization - Aging Waste Facility

1. A revision to the OSR was released on February 2, 1987 (SD-HS-SAR-010, Rev 2) which changed the requirement stated in 9e page 3 from a Safety limit to a Limiting Condition for Operation and changed the discharge limit to 5000 times Table II reference RHO-MA-139 (WHC-CM-7-5.) This was approved with comments by DOE in March 1989.

2. The need for a design change was identified to provide for automatic shutdown of the Air Lift Circulators in the event of a ventilation outage. This will minimize the potential for release of any radioactive material.

9. Is further Evaluation and/or Corrective Action Necessary:

No

10. Final Evaluation and Lessons Learned:

TBD.

11. Corrective Action Taken:

a) The OSRs referenced in Items 5a through 5c will be deleted from the applicable SARs. The OSRs to be deleted are documented in letter, G. L. Dunford to G. L. Jones, subject, "Operational Safety Requirements Deletion" dated December 16, 1986.

Action: The OSR deletion packages for 204-AR and Single Shell Tanks, and the Double Shell Tank modification were submitted to DOE-RL for approval. DOE approved several OSR deletions and requested Westinghouse to re-evaluate or modify the remaining OSRs. Westinghouse completed the re-evaluation/modification for the 204-AR and Double Shell Tank packages and these have been resubmitted to DOE-RL for approval. The Single Shell Tank administrative OSR modification package is currently in Westinghouse for functional approval.

Additionally, WHC-CM-5-7, Section 2.1, Internal Surveillance has been changed to require a quarterly audit of selected OSRs to verify compliance. Surveillances have been conducted as required and are documented.

b) Biota growth in the U-14 ditch will be monitored in accordance with the plan delineated in letter, A. R. Johnson to B. F. Weaver, Subject "216-U-14 Open Ditch Biota", dated January 9, 1987.

In order to determine the risk of biological spread of radioactive contamination at 216-U-14 Ditch, 200/600 Areas Environmental Protection Section had vegetation samples taken and analyzed for radionuclides which might be expected to be absorbed through the root system. The analyses results from all samples indicated radionuclide levels which were below levels of concern with respect to established standards. This is not to be interpreted as an absence of contamination in the ditch, but only that samples analyzed to date have no appreciable radioactive contamination load. Further corrective action, other than preventing the exposure of the ditch sediments, would currently not be necessary at this site.

The original point of concern leading to the sampling efforts at this site was the exposure of sediments (i.e., mud) in a surface contamination area. Exposed mud at this site was observed to be used by swallows which have been documented as spreading radioactive contamination. Also, the exposed mud, as it dried, was available to be dispersed by winds. The prevention of exposure of contaminated sediments must still be addressed.

There has been a characterization study completed concerning this ditch titled "Environmental Characterization of 216-U-14 Ditch" by D. S. Landeen and J. G. Leitz, document number RHO-HS-EV-4.

Action: The prevention of exposure of contaminated sediments is being accomplished at the 216-U-14 ditch by maintaining the water level at approximately 2'10". A recent DOE-RL surveillance indicated that TFS&O is in compliance. 200/600 Areas Environmental Protection Section (L. P. Diediker)

c. Biota growth in the 216-A-37-2 Crib will be investigated and the results coordinated with the 200/600 Areas Environmental Protection Section. Action: Tank Farm Services (B. F. Weaver) Complete.

d. Based on results of the investigation of IIc, develop a plan of action to correct any identified problem.

Action: 200/600 Areas Environmental Protection Section (L. P. Diediker) Complete.

e. Design for the automatic cutoff for Air Lift Circulators has been released. Installation of system began on March 11, 1987. Tank Farm Maintenance completed installation on July 20, 1987.

Action: Tank Farm Maintenance (D.P. Kerwick) Complete.

12. Programmatic/Project Cost and Schedule Impact:

None

13. Impact upon National Codes and Standards, Including NE Standards:

None

14. Similar Unusual Occurrence Report Numbers:

None

UNUSUAL OCCURRENCE REPORT
(CONTINUED)

15. Signatures:

Originator _____ Date 8/22/89
R. J. Baumhardt, Manager
Tank Farms

Approved by _____ Date 8/25/89
H. F. Daugherty, Manager
Defense Waste Management

Approved by _____ Date 8-25-89
P. R. Pretorius, Manager
Waste Management and Site Support Quality Assurance

Approved by _____ Date 8-24-89
A. R. Schade, Manager
Nuclear Safety

Approved by _____ Date 8-25-89
L. P. Diediker, Manager
200/600 Areas Environmental Protection Section

Approved by _____ Date 8-25-89
J. P. Hinckley, Manager
Facility Systems Safety Analysis

16. Classification Review: _____ Classified ___ Unclassified X
7/31/89

Westinghouse
Hanford Company

P.O Box 1970 Richland, WA 99352

August 28, 1989 8854844 R2

Mr. R. E. Gerton, Director
Waste Management Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

INTERIM UNUSUAL OCCURRENCE REPORT, RHO-UOR-87-04

The attached Unusual Occurrence Report "OSR Violation - Review of Tank Farm Operational Safety Requirements (OSRs) cannot verify compliance" documents an event in which positive compliance of nine out of one hundred and sixty-six Tank Farm OSRs could not be verified as the OSRs were written.

A review of the Tank Farm OSRs revealed several which could be deleted since they did not meet the new criteria for OSRs. Westinghouse has been working with DOE-RL to get OSRs deleted/modified for 204-AR, Single Shell Tank (SST) and Double Shell Tank (DST) SARs. The 204-AR OSR deletion package and DST OSR modifications have been resubmitted to DOE-RL for comment and approval. The SST administrative OSRs package is currently in the Westinghouse Function Review cycle.

The event had no programmatic impact. Public Health and Safety were not affected.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

H. F. Daugherty
Defense Waste Management Division

skb

Attachment

DOE-RL - G. J. Bracken
A. W. Kellogg
A. J. Rizzo

RECEIVED BY
AUG 30 RECD

7. Immediate Evaluation:

Although the surface level measurement appeared to be stable from September 1981 until December 1984, a statistical evaluation performed by Process Chemistry & Engineering Laboratories showed an indication that sometime between August 1982 and August 1983, the liquid level began to decrease.

Tank Farm Plant Engineering (TFPE) and Tank Farm Surveillance Analysis & Support (TFSA&S) investigations concluded that the total loss of liquid in Tank 241-C-103 over the past six years can be accounted for by the natural breathing of the tank and its adjunct active ventilation system.

8. Immediate Action Taken and Results:

1) The FIC was flushed and calibrated May 20, 1987. Readings were unchanged.

2) Drywells associated with Tanks 241-C-103, 105 and 106 were monitored with the neutron probe on June 12, 1987. The results indicated that no significant changes had occurred.

3) Directional and multichannel analyzer data was obtained for drywell 30-03-09 (June 26, 1987, and July 2, 1987). The directional probe test results found that the only radioisotopes found at the 80-ft depth were cobalt-60 and naturally occurring potassium-40. Tank Farm Plant Engineering investigation evaluation, addressing Environmental Protection Deviation Report 87-10, concluded the increased radiation levels in drywell 30-03-09 were due to a material migration from an old transfer line leak.

4) In-tank photographs were taken July 22, 1987, and showed a liquid surface. The FIC plummet is contacting liquid.

9. Is Further Evaluation and/or Corrective Action Necessary? Yes __ No _X_
If Yes, Before Further Operation? Yes __ No ___

If Yes, By Whom? N/A
When?

10. Final Evaluation and Lessons Learned

Emergency pumping is not justified. This tank will be stabilized as scheduled.

Ninety eight of the 149 single shell tanks (SST) have been stabilized. An active program has been defined to interim stabilize the remaining SSTs with a completion target date of 1996. The environmental impact of working to this date has been evaluated and is found to be acceptable.

11. Corrective Action Taken_____ Recommended_____ To Be Supplied ____

N/A

12. Programmatic/Project Cost and Schedule Impact:

N/A

Unusual Occurrence Report
Contractor: Westinghouse Hanford Company 1. Report Number WHC-UO-88-034-TF-05

13. Impact Upon National Codes and Standards, Including NE Standards

N/A

14. Similar Unusual Occurrence Report Numbers:

UOR#	OR#
WHC-UO-88-028-TF-03	82-01
WHC-UO-88-029-TF-04	81-03

15. Signatures:

Originator NJ Vermeulen Date 11-21-88
NJ Vermeulen, Engineer, TFSA&S

Approved by RK Welty Date 11-21-88
RK Welty, Manager, TFSA&S

Approved by RB Gelman Date 11-21-88
RB Gelman, Manager, Chemical Plant Quality Assurance

Approved by AR Schade Date 11-21-88
AR Schade, Manager, Nuclear Facility Safety

Approved by RJ Baumhardt Date 11-22-88
RJ Baumhardt, Manager, Tank Farms

Approved by DD Wodrich for Date 11/23/88
HF Daugherty, Manager, Defense Waste Management Division

Approved by R-C. Wheeler for Date 11-22-88
GD Carpenter, Manager, Environmental Assurance

Classification RA Zinsli 11-22-88 X Unclassified X Not UCNI
RA Zinsli

Unusual Occurrence Report
Contractor: Westinghouse Hanford Company

1. Report Number WHC-UO-88-034-TF-05
Reference: TFS&O-EFS-88-0124

Date of Report: Initial - 10-11-88
Interim
Final - 11-21-88

Date of Event/Occurrence 10-03-88
Time of Event/Occurrence _____

Division/Department or Project: Tank Farm Surveillance Analysis & Support

2. Facility, System, and/or Equipment

Tank 241-C-103 C-Farm 200 East Area

3. Subject of Event/Occurrence

The automatic FIC surface level measurement indicates a decreasing trend in the liquid level in Tank 241-C-103, -0.50 inch since December 1984. No decrease criteria have been violated.

4. Apparent Cause: Design ___ Material ___ Personnel___ Other_X__

The decrease in the liquid level in Tank 241-C-103 is attributed to evaporation.

5. Description of Event/Occurrence

A baseline of 67.40 inches was established for Tank 103-C on July 30, 1979, after the tank was pumped to 104-C. The leak detection decrease criterion for the tank is -0.50 inch from this baseline. From August 1979 to September 1981, the automatic FIC surface level measurement increased from 67.45 inches to 68.10 inches (+0.65 inch). The level appeared constant at 68.10 inches until December 1984, when the level started to show a very slow decrease to March 1988 when the level reached 67.60 inches (-0.50 inch). The level has remained stable at 67.60 since March 1988. The leak detection criteria have not been exceeded.

During the period of the reported decrease, there was an exhauster connected to the central ventilation cascade system containing this tank.

Tank 103-C was also under investigation in 1987 due to leak detection dry well (30-03-09) radiation level increase (Environmental Protection Deviation Report 87-10). Two additional drywells associated with Tank 103-C (30-03-01 and 30-03-03) have indicated the presence of radionuclides since first monitored in 1974, but are showing no increase at this time.

Event Fact Sheet TFS&O-EFS-88-0124 was issued October 3, 1988.

6. Operating Conditions of Facility at Time of Event/Occurrence

Inactive, partial interim isolated single shell underground waste storage tank.

8956610

UNUSUAL OCCURRENCE REPORT

Unusual Occurrence Report

87-04 (Westinghouse Hanford Company, formerly Rockwell Hanford Operations Report)

Contractor: Westinghouse Hanford Company Report Number: 87-04

Date of Occurrence: 3/13/87

Interim: July 11, 1988
March 10, 1989
August 22, 1989

1. Department:

Tank Farm Surveillance and Operations

2. Facility, System, and/or Equipment:

Tank Farm Operational Safety Requirements

3. Subject of Occurrence:

OSR Violation. Review of Tank Farm Operational Safety Requirements cannot verify compliance.

4. Apparent Cause: Design__ Material__ Personnel__ Procedure_X__Other__

"A comprehensive management program does not exist to assure compliance with all OSRs."

5. Description of Occurrence:

Westinghouse Hanford Company is in the process of upgrading Operational Safety Requirements (OSR) contained in Safety Analysis Reports (SAR) for the operating facilities. As a part of this upgrade process, a new Operational Safety Requirement criteria has been developed to provide a consistent approach in determining and developing OSR for incorporating into SAR. Each existing OSR is currently being evaluated against the new criteria to determine if the OSR requires revision to meet criteria.

During this evaluation, twenty-four OSRs for Decontamination and Decommissioning and Tank Farm operations were identified as not meeting the OSR criteria and should be deleted from the SARs. The OSRs identified for deletion failed the criteria primarily because they are not of controlling importance to safety and also because they are covered by other policies and procedures.

During this review of the above twenty four OSRs identified for deletion, it was determined that positive compliance could not be verified for several of the OSRs. At this point, Tank Farm Surveillance and Operations management directed that a full review be conducted for all one hundred and sixty-six Tank Farm OSRs to determine compliance.

Unusual Occurrence (Critique) Report
Contractor: Westinghouse Hanford Company

1. Report Number WHC-UO-88-028-TF-03
Reference: EFS TFSO-EFS-88-085

Status and Date of Report: ____ Initial ____ Date of Event/Occurrence 7-13-88
____ Interim ____ Time of Event/Occurrence ____
X Final 8-30-88

Division/Department or Project: Tank Farm Surveillance Analysis & Support

2. Facility, System, and/or Equipment

Tank 241-SX-104

HW-C-11
EG-006

3. Subject of Event/Occurrence

Tank 241-SX-104 has been classified as an assumed leaker..

4. Apparent Cause: Design ___ Material X Personnel ___ Other ___

Apparent Tank Leak

5. Description of Event/Occurrence

The Liquid Observation Well (LOW) Interstitial Liquid Level (ILL) exceeded the 0.3 foot decrease criteria in Tank 241-SX-104 with the Gamma Probe. Environmental Protection Deviation Report 88-03 was issued February 19, 1988, and an investigation into the tank integrity was commenced. Integrity investigation was completed on July 13, 1988, and a decision was made to issue a UOR.

6. Operating Conditions of Facility at Time of Event/Occurrence

Inactive, Underground Single-Shell Waste Storage Tank

7. Immediate Evaluation:

LOW scans covering three years were evaluated for trends. The decrease in the interstitial liquid level was verified by data from three probes (Gamma, Neutron, and Acoustic). A review of the Automatic FIC surface level measurement shows an erratic decrease since 1984. Photographs (2-14-84) show a crusted irregular surface of solids. Small pools of liquid are visible. Photographs (01-14-88 and 05-05-88) show no major change in the overall surface, but minor changes in the size of the small liquid pools. Surface level measurement anomalies can be expected.

8. Immediate Action Taken and Results:

1) Increased monitoring of tank level was commenced. Scans with the Gamma, Neutron, and Acoustic Probes were obtained and verified previous criteria violation data. Action: TFSA&S, Completed

2) Following confirmation of decreasing tank level, pumping of Tank 241-SX-104 was commenced on May 18, 1988 (Total net pumped 42,200 gallons). The pumping of the waste to the 244-S Double Container Receiving Tank was temporarily ceased on

July 14, 1988 due to pump failure. The pump was replaced on July 29, 1988 and pumping commenced. The submersible pumping was completed on August 16, 1988 (Total net pumped 99,900 gallons). In-tank photographs have been requested (August 30, 1988) for reference prior to the initiation of jet pumping. Action: TFS&O

A Peer Review group was formed in accordance with procedure RHO-CD-1193 on May 17, 1988. The Peer Review Group declared Tank 241-SX-104 an assumed leaker on July 13, 1988. Action: Peer Review Group Chairman, Completed

9. Is Further Evaluation and/or Corrective Action Necessary? Yes ___ No X
If Yes, Before Further Operation? Yes ___ No ___ N/A - Tank is Deactivated
If Yes, By Whom?
When?

10. Final Evaluation and Lessons Learned

The Peer Review Team classified Tank 241-SX-104 an assumed leaker on July 13, 1988 because tank integrity could not be determined with a confidence level of 95%.

11. Corrective Action Taken X Recommended _____ To Be Supplied _____

Tank 241-SX-104 is currently being pumped for tank stabilization and isolation.

12. Programmatic/Project Cost and Schedule Impact:

N/A

13. Impact Upon National Codes and Standards, Including NE Standards

N/A

14. Similar Unusual Occurrence Report Numbers:

UOR#	OR#
83-16	76-85
83-11	76-125
	77-17
	77-188

15. Signatures:

Originator Donna J Ormsbee Date 8-30-88
Engineer, Tank Farm Surveillance Analysis & Support

Approved by R K Duffy Date 8-30-88
Manager, Tank Farm Surveillance Analysis & Support

Approved by R L Baumhardt Date 8-31-88
Manager, Tank Farm Surveillance & Operations

Approved by H F [illegible] Date 9/2/88
Manager, ~~Defense~~ Waste Management Division

Approved by J T Smith for Date 9/8/88
Manager, Chemical Plant Quality Assurance

Approved by Arlen R Richards Date 9-5-88
Manager, Nuclear Facility Safety

Approved by R D Leaverton Date 9/12/88
Manager, Environmental Assurance

Classification R A Zinsli 9-14-88 X Unclassified
Not UCNI ___ Classified

Westinghouse
Hanford Company

P.O. Box 1970 Richland WA 99352

8855768

Mr. R. E. Gerton, Director
Waste Management Division
U. S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

REVISION OF UNUSUAL OCCURRENCE REPORT FOR TANK 241-SX-104
NUMBER WHC-UO-028-TF-03

Attached is the revision pertaining to Unusual Occurrence Report number WHC-UO-88-028-TF-03. The referenced report contained an editorial error Section 8 paragraph 2). The reference report stated that pumping temporarily ceased due to failure of a tank. The pumping was temporarily ceased due to a pump failure. This error has been corrected in the attached revision.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

H. F. Daugherty, Manager
Defense Waste Management Division

skb

Attachment

DOE-HQ - Director, Quality Assurance

DOE-OR - William Cooper
J. L. Meinhardt

DOE-RL - J. L. Rhoades
A. W. Kellogg (w/o attachment)
G. J. Bracken

EFS-88-092

Unusual Occurrence Report
Contractor: Westinghouse Hanford Company 1. Report Number WHC-UO-88-029-TF-04

Status and Date of Report: __X__ Initial 8-12-88 Date of Event/Occurrence 7-26-88
____ Interim _____ Time of Event/Occurrence _____
__X__ Final 9-15-88

Division/Department or Project: Tank Farm Surveillance Analysis & Support

2. Facility, System, and/or Equipment

Tank 241-AX-102 200 East Area

3. Subject of Event/Occurrence

Tank 241-AX-102 has exceeded the 1.00 inch decrease criteria and evaluations cannot, (with 95% confidence), show the decrease to be due solely to evaporation.

4. Apparent Cause: Design __X__ Material _____ Personnel _____ Other __X__
The decrease is attributed to a tank leak. The fact that the tank had been Interim Isolated prior to meeting Interim Stabilization criteria (i.e., less than 5.000 gallons of supernatant) was noted during the investigation of this tank leak.

5. Description of Event/Occurrence

A baseline of 19.50 inches was established for Tank 102-AX after deactivation (September 1980) and since then, the tank has exhibited measurement fluctuations with a slow decrease.

On June 18, 1984, the baseline was adjusted from 19.50 inches to 18.75 inches (-0.75 inch), with the decrease attributed to evaporation. On May 17, 1988, the 102-AX Manual Tape surface level measurement of 17.50 inches exceeded the 1.00 inch decrease criteria by 0.25 inch. A Surveillance Deviation Report was issued on May 27, 1988, and investigation into the tank's integrity was commenced.

During the investigation, it was noted that this single-shell tank (SST) had been Interim Isolated prior to completion of Interim Stabilization activities. There is no documentation available to support Interim Isolation of the tank before Interim Stabilization criteria had been met.

6. Operating Conditions of Facility at Time of Event/Occurrence

Inactive, Interim Isolated Underground Single-Shell Waste Storage Tank.
Pumpable 23,000 gallons, Supernatant 23,000 gallons.

7. Immediate Evaluation:

Although the Manual Tape plummet located toward the perimeter of the tank is not visible, the in-tank photographs do show a clear liquid surface with what appears to be a thin film on the surface.

If the Tank Farm Process Engineering (TFPE) liquid level decrease evaluation could not account for the decrease through evaporation, (applying the 95% confidence rule criteria), it was the position of Tank Farm Surveillance Analysis & Support (TFSA&S) that the integrity of Tank 241-AX-102 was questionable.

8. Immediate Action Taken and Results:

1) A temporary thermocouple was placed in the tank on July 18, 1988, and vapor space temperature readings were obtained for four consecutive days (7-19-88 through 7-22-88). This information was used to conduct the engineering calculation of evaporation losses.

On July 26, 1988, an engineering calculation was completed which, (based on the above temperature data), showed that evaporation could not account, (with 95% confidence), for all of the surface level measurement decrease. An Event Fact Sheet (TFS&O-EFS-88-092) was issued July 27, 1988.

2) In-tank photographs taken June 6, 1988, were reviewed and were not indicative of any confirmatory evidence of liquid level decrease.

3) Drywell data associated with Tank 241-AX-102 was reviewed and are not indicative of a tank leak.

4) Leak detection pit data associated with Tank 241-AX-102 were reviewed and are not indicative of a tank leak (the leak detection pit is of limited use for this tank).

9. Is Further Evaluation and/or Corrective Action Necessary? Yes _ No X

If Yes, Before Further Operation? Yes ___ No ___ N/A ____- Tank is Deactivated
If Further Evaluation is Necessary, by Whom? N/A
When?

10. Final Evaluation and Lessons Learned

The Peer Review Team classified Tank 241-AX-102 an Assumed Leaker on August 17, 1988, because the tank integrity could not be determined with a confidence level of 95%.

Ninety-six of the 149 SSTs have been stabilized. An active program has been defined to interim stabilize the remaining 53 SSTs with a completion target date of 1996. The environmental impact of working to this date has been evaluated and is found to be acceptable.

11. Corrective Action Taken X Recommended _____ To Be Supplied _____

As a precautionary measure, Tank Farm Surveillance & Operations (TFS&O) made arrangements to pump the tank. The pumping of Tank 241-AX-102 commenced on August 12, 1988, and was completed on August 25, 1988 (total net pumped 13,200 gallons). In-tank photographs taken September 2, 1988, show the surface to be sludge material and some liquid pools. The estimated supernatant liquid remaining is 2750 gallons. The initial estimation of 23,000 gallons supernatant was overestimated due to an excessive amount of sludge present in the tank. Approximately 3,000 gallons is the estimated leak volume.

A Peer Review Team was formed to evaluate the integrity of Tank 241-AX-102, and on August 17, 1988, the Peer Review Team declared Tank 241-AX-102 an "Assumed Leaker."

Unusual Occurrence Report
Contractor: Westinghouse Hanford Company   Report Number WHC-UO-88-029-TF-04

On September 6, 1988, the official notification to DOE-RL was made, reference external letter 8855485. All requirements for interim stabilization have been completed.

An evaluation was also made of other single-shell tanks which may have been Interim Isolated prior to meeting Interim Stabilization criteria. The evaluation revealed one other single shell tank (241-A-102) which had been Interim Isolated but had not met Interim Stabilization criteria. Tank 102-A is being evaluated for further stabilization. The evaluation is to be completed by October 17, 1988. Action: SSTPE

12. Programmatic/Project Cost and Schedule Impact:

N/A

13. Impact Upon National Codes and Standards, Including NE Standards

N/A

14. Similar Unusual Occurrence Report Numbers:

UOR#	OR#
83-16	76-85
83-11	76-125
88-028-TF-03	77-17
	77-188

15. Signatures:

Originator NJ Vermeulen   Date 9-29-88
NJ Vermeulen, Engineer, TFSA&S

Approved by RK Welty   Date 9-29-88
RK Welty, Manager, TFSA&S

Approved by R B Gelman   Date 9-29-88
RB Gelman, Manager, Chemical Plant Quality Assurance

Approved by Alan R Schade   Date 10-4-88
AR Schade, Manager, Nuclear Facility Safety

Approved by   Date 10-7-88
for RJ Baumhardt, Manager, Tank Farm Surveillance & Operations

Approved by HF   Date 10/4/88
HF Daugherty, Manager, Defense Waste Management Division

Approved by   Date 10-4-88
GD Carpenter, Manager, Environmental Assurance

Classification R.A. Zinsli   X Unclassified
RA Zinsli   Not UCNI

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

October 11, 1988 8856572

Mr. R. E. Gerton, Director
Waste Management Division
U. S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

FINAL UNUSUAL OCCURRENCE REPORT, WHC-UO-88-029-TF-04

The attached Unusual Occurrence Report "Tank 241-AX-102 has exceeded the 1.00 inch decrease criterion and evaluations cannot (with 95% confidence), show the decrease to be due solely to evaporation" documents an event in which the status of a single shell tank has been determined to be leaking.

The event had no programmatic impact. Public Health and Safety were not affected. Preparations are underway to transfer the liquid waste from Tank 241-AX-102 to the double shell tank system.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

H. F. Daugherty, Manager
Defense Waste Management Division

bmh

Attachment

DOE-HQ - Director, Quality Assurance

DOE-OR - William Cooper
J. L. Meinhardt

DOE-RL - J. L. Rhoades
A. W. Kellogg (w/o attachment)
G. J. Bracken

RECEIVED BY
OCT 19 RECD

9112052147 2

UNUSUAL OCCURRENCE REPORT

Contractor: Westinghouse Hanford Company (WHC)

Report Number: WHC-UO-89-04-TF-02
Related EFS: TF-EFS-89-005
TF-EFS-89-006
TF-EFS-89-007
TF-EFS-89-009

Status/Date of Report: Initial: 01/09/89
Interim: 03/21/89

Date of Event/Occurrence: 01/06/89

Time of Event/Occurrence: 0800 hours

1. Division/Department or Project:

Defense Waste Management Division/Tank Farms

2. Facility, System, and/or Equipment:

The original event was a surveillance Non-Conformance for failure to take temperature readings every 45 days on single-shell tanks with heat loadings greater than 40,000 Btu/h (tanks 101, 102, 103, 104, 105, and 106-SX). Subsequent investigation of all Operational Safety Requirements (OSRs) indicated other facilities to also have compliance problems (see below).

3. Subject of Event/Occurrence:

Tank Farm Non-Compliance with Operational Safety Requirements (OSRs).

4. Apparent Cause: Design ___ Material ___ Personnel S
Procedure ___ Other P

Other: A comprehensive administrative system does not exist which includes all OSRs and the current status of monitoring against each requirement.

Personnel: Data taking requirements are not adequately followed up if Operations personnel indicate equipment problems or other reasons for failure to record information.

5. Description of Event/Occurrence:

On January 6, 1989, it was discovered that temperature readings for some single-shell tanks with heat loads greater than 40,000 Btu/h had not been taken at least every 45 days in accordance with SD-WM-SAR-006 requirements in Chapter 11. Tanks greater than 40,000 Btu/h are listed in Operations procedure TO-020-120.

6. Operating Conditions of Facility at Time of Event/Occurrence:

Tank 101-106-SX had been removed from service in 1980. Each tank contains some drainable liquids and salt cake. 104-SX was being readied for saltwell pumping.

7. Immediate Evaluation:

A preliminary investigation was conducted January 5-6, 1989, of not only the single-shell tank OSR requirements but also was expanded to include all other OSR requirements for Tank Farms. Results are as follows:

Event 1: Surveillance Non-Conformance: SD-WM-SAR-006, Section 11.4.2.1. It has been determined that the 45-day temperature monitoring requirement for tanks 101 to 106-SX had been violated. The last temperature of record for tanks 101, 102, 103, 105, and 106-SX was taken October 3, 1988. Tank 104-SX had a temperature reading taken October 3, 1988, and not again until January 2, 1989.

Event 2: Surveillance Non-Conformance: RHO-CD-1415, Section 11.4.4. It has been determined that the requirement to perform dome deflection monitoring once per year for single-shell tanks with air lift circulators has been violated. Preliminary investigation indicates that all dome deflection monitoring is performed on a 2-year cycle.

Event 3: Limiting Conditions for Operations (LCO) violation: SD-HS-SAR-009, Section 11.2.3. It has been determined that the LCO requirement to perform an annual structural inspection of the 242-T Evaporator has not been performed.

Event 4: Potential violation of OSR or surveillance non-conformance. Several PMs and PISCES due in the month of December, 1988, had not been completed as of 01/12/89 when brought to management's attention. Investigation of the various requirements is underway.

The balance of this Unusual Occurrence (UO) will refer to actions as related to either Event 1, 2, or 3. If the reference does not indicate an event number, then the reference is general in nature.

8. Immediate Action Taken and Results:

a. Notified WHC Management, Nuclear Facility Safety, and DOE-RL.	Complete 01/05/89 & 01/06/89
b. Immediately implemented recovery actions as defined in Safety Analysis Report (SAR):	
Event 1: Notified management. Took tank temperatures, readings. None of the temperatures had exceeded the 350°F OSR.	Complete 01/06/89

Event 2: Notified Management and Tank Farm Plant Engineering that dome deflection monitoring must be completed within 30 days of notification.	Complete 01/07/89
Event 3: Notified Management and Tank Farm Plant Engineering that a structural inspection must be performed immediately.	Complete 01/07/89
Event 4: Notified Management and Tank Farm Plant Engineering that an immediate evaluation of the impact of those PMs and PISCES that were missed must be completed.	Complete 01/12/89

c. Perform preliminary review of all OSRs to determine if additional violations exist. — Complete 01/07/89

Those items listed in 7 above and UOR-87-04 were noted.

d. Event 1: Research records to determine if the tanks listed in Operations procedure TO-020-120 is an accurate listing of all single-shell tanks with heat loads greater than 40,000 Btu/h. — Complete 01/06/89

Procedure TO-020-120 does not have the following tanks listed for monthly surveillances which meet the 40,000 Btu/h heat load requirement:

104-A	
105-A	110-SX
107-SX	111-SX
108-SX	112-SX
109-SX	114-SX

e. Implement temporary requirement to review all data sheet readings not taken or out of compliance on each shift. — Complete 01/09/89

9. Is Further Evaluation and/or Corrective Action Necessary? Yes__X__ No_____

If Yes, Before Further Operation? Yes_____ No__X__

If Yes, By Whom? Tank Farm Plant Engineering, Tank Farm Operations, Single Shell Tanks, Maintenance Engineering Administration & Analysis

When? See Below.

10. Corrective Action Taken:

See 8 above.

Corrective Action Recommended:

a.	Complete investigation of conformance with all OSRs in Tank Farms.	Complete 01/18/89 Tank Farm Plant Engineering
b.	Implement a system to track OSRs to applicable procedures and actual field data. The system should provide for notification of pending problems prior to violation of any OSR. Provide training to Operations personnel.	ECD: 06/30/89 Tank Farm Plant Engineering
c.	Perform a spot check of Operator proficiency in the use of potentiometer for taking tank temperature readings.	Complete 02/03/89 Tank Farm Operations
d.	Complete OSR recovery actions for dome deflection monitoring and implement a system to ensure annual monitoring is performed on all SST with air lift circulators.	Complete 02/07/89 Single Shell Tanks
e.	Review and update 110 procedures, ~~if~~ required, to reflect current OSRs.	ECD: 06/30/89 Tank Farm Plant Engineering
f.	Review and update balance of Operating Specification Documents (OSDs) (5 each) to reflect curent OSRs.	ECD: 09/30/89 Tank Farm Plant Engineering
g.	Implement a system to calculate and formally document, at least annually, the single-shell tanks with heat loadings greater than 40,000 Btu/h. Incorporate changes into applicable OSDs, procedures and data sheets.	ECD: 05/03/89 Single Shell Tanks
h.	Complete the 242-T structural evaluation and implement a system to ensure that the 242-T Evaporator is evaluated annually.	Complete Evaluation 01/16/89 ECD: 06/30/89 (implement system) Tank Farm Plant Engineering
i.	Review and upgrade the system for tracking and monitoring progress of PMs and PISCES to ensure adequate resources are applied to complete critical items prior to data due. Ensure a notification process exists to ensure management is made aware of potential problems before they become violations.	Complete 02/28/89
j.	Review the PM and PISCES computer scheduling system and make necessary corrections to ensure that the software supports completion of OSR requirements on a timely basis.	ECD: 06/30/89 Maintenance Engineering Administration & Analysis

11. Programmatic/Project Cost and Schedule Impact:

None

12. Impact Upon National Codes and Standards, Including NE Standards:

None

13. Similar Unusual Occurrence Report Numbers:

UOR-8704. Initial UOR filed March 13, 1987.

14. Signatures:

Originator: T D Blankenship Date: 03/31/89
Manager, Tank Farm Operations

Approved By: R A Baumhardt Date: 4/3/89
Manager, Tank Farms

Approved By: H Date: 4/3/89
Manager, Tank Farm Plant Engineering

Approved By: R E Raymond Date: 5-5-89
Manager, Single Shell Tanks

Approved By: George A Stanton for R E Slocum Date: 4/23/89
Manager, 200 Area Support Services

Approved By: R Ellingson for Date: 4/7/89
Manager, Nuclear Facility Safety

Approved By: P K Austin Date: 4/17/89
Manager, Waste Management & Site Support Quality Assurance Group

Approved By: HFL Date: 5/17/89
Manager, Defense Waste Management Division

Approved By: George Stanton Date: 5/1/89
Manager, Maintenance Engineering Services

Review for classification: Classified _____ Unclassified: X

R E Van Liew Cox Date: 4-14-89

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

May 19, 1989 8952727

Mr. G. J. Bracken, Acting Director
Waste Management Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Bracken:

INTERIM UNUSUAL OCCURRENCE REPORT, WHC-UO-89-04-TF-02

The attached Unusual Occurrence Report, "Tank Farm Non-Compliance with Operational Safety Requirements (OSRs)", documents surveillance non-conformance for failure to take temperature readings every 45 days on single-shell tanks with heat loadings greater than 40,000 Btu/h (Tanks 101, 102, 103, 104, 105, & 106-SX). Subsequent investigation of all OSRs indicated other facilities to also have compliance problems.

A preliminary investigation showed the 45-day temperature monitoring requirements for Tanks 101 to 106-SX had been violated. It was also determined that the requirements to perform dome reflection monitoring once per year for single-shell tanks with air lift circulators had been violated. The LCO requirement to perform an annual structural inspection of the 242-T Evaporator had not been performed.

Tank temperatures were taken and none exceeded the 350°F OSR. Dome reflection monitoring has been completed, as has the structural inspection of the 242-T Evaporator. Actions are being taken to ensure the OSRs are complied with.

The event had no programmatic impact. Public Health and Safety were not effected.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

H. F. Daugherty, Manager
Defense Waste Management Division

RECEIVED BY
MAY 2 1 RECD

bls

Attachment

DOE-RL - A. W. Kellogg (w/o attachment)
A. J. Rizzo

HW-G-15-002
TF-009

UNUSUAL OCCURRENCE (CRITIQUE) REPORT

CONTRACTOR: WESTINGHOUSE HANFORD COMPANY
1. REPORT NUMBER: WHC-UO-89-009-TF-03
Reference: TF-EFS-89-011

INITIAL REPORT STATUS: X INITIAL REPORT DATE: 1/31/89

INTERIM REPORT STATUS: X INTERIM REPORT DATE: 7/26/89

FINAL REPORT STATUS: FINAL REPORT DATE:

EVENT/OCCURRENCE DATE: 1/25/89 EVENT/OCCURRENCE TIME:

DIVISION/DEPARTMENT OR PROJECT: Tank Farm Surveillance Analysis & Support

2. FACILITY, SYSTEM AND/OR EQUIPMENT:
Tank 241-A-102, 200 East Area

3. SUBJECT OF EVENT/OCCURRENCE:
Surface level measurement decrease in single-shell tank 241-A-102.

4. APPARENT CAUSE:

DESIGN:

IDENTIFY:

MATERIAL:

IDENTIFY:

PERSONNEL:

PROCEDURE:

OTHER: Frequent measurement anomalies, and a large volume of pumpable liquid.

5. DESCRIPTION OF EVENT/OCCURRENCE:

On January 21, 1989 (2000 hours), the automatic FIC surface level measurement in tank 241-A-102 decreased from 33.20 inches to 30.50 inches, thus exceeding the 1.00 inch decrease criteria. The measurement level remained constant at 30.40 to 30.50 inches until July 17, 1989, when pumping of the tank commenced. Prior to January 21, 1989, the surface level measurement had increased from 31.50 inches on November 9, 1987, to 33.20 inches on January 21, 1989.

Since the current baseline of 32.40 inches was established November 24, 1980, after the tank was pumped and deactivated, surface level measurement anomalies with increases and decreases as well as periods of stability were observed. These measurement anomalies could be the

result of buildup and loss of salt crystals on the FIC plummet, plus the movement of floating solids in the vicinity of the FIC plummet.

An Event Fact Sheet was issued January 25, 1989, and investigation into the tank's integrity was commenced. On January 31, 1989, the decision was made to issue an Unusual Occurrence Report.

6. OPERATING CONDITIONS OF FACILITY AT TIME OF EVENT/OCCURRENCE:

Tank 241-A-102 is an inactive interim isolated single-shell underground waste storage tank. Pumpable 72,000 gallons, supernatant 72,000 gallons, reference WHC-EP-0182-8, November 1988.

7. IMMEDIATE EVALUATION:

In-tank photographs taken August 22, 1986, reveal a surface of clear liquid and large areas of what appeared to be a thin layer of floating sludge. The FIC plummet is making contact with the surface near a liquid/solids interface.

Tank 102-A has been documented on the Alert List since June 1988, due to drywell 10-02-08 showing that ten of the 11 past monitorings indicate the strongest radiation signal is at a depth of 85 feet. The background radiation levels for this drywell are <50 c/s.

The action criteria was not violated as specified in SD-WM-TI-357 which states "less than 200 c/s radiation level must double and exceed 200 c/s." The scan for July 5, 1989, showed 35 c/s at the 86 foot level.

8. IMMEDIATE ACTION TAKEN AND RESULTS:

1. On January 23, 1989, the Tank Farm day shift supervisor was notified by TFSA&S that tank 102-A FIC surface level measurement of 30.50 inches was exceeding the 1.00 inch decrease criteria and was alarming on CASS. On that date a request was made for a field reading verification and an FIC recalibration. The field reading was obtained on day shift, January 23, 1989, and showed 30.50 inches, verifying the CASS printout.

2. The request for the recalibration of the FIC was completed on swing shift January 25, 1989. A reading of 30.40 inches was obtained. The FIC plummet was clean.

3. In-tank photographs were requested on January 25, 1989, and were completed on January 27, 1989.

   An evaluation of the in-tank photographs taken January 27, 1989, was conducted by Single-shell Tank Process Engineering and Tank Farm Surveillance Analysis & Support. The photographs are hazy, indicating the presence of steam in the tank vapor space.

Comparison with reference marks on the inside sidewalls of the tank does not indicate either an increase or decrease in liquid level. The plummet appears to have a kink in the tape but the resolution of the photographs is not sharp enough to confirm this observation. What is apparent, however, is the change in the surface of the tank contents. The surface appeared to be approximately 90% solids in the 1986 photographs. The surface is 40% to 50% solids in the current photographs. There is no obvious evidence that there has been a surface level decrease, and there are solids in the area of the FIC plummet in both sets of photographs. These solids could be creating measurement anomalies.

A request was made on February 6, 1989, to recheck the FIC for a possible kink in the tape and flush the plummet.
Action: TFS&O Due: February 10, 1989

On February 9, 1989, the 102-A FIC plummet was raised to flush and calibrate. The stainless steel tape was found to be free of defects or distortion. Completed February 9, 1989

4. Drywell and lateral data associated with tank 241-A-102 were reviewed and are not indicative of a tank leak.

5. External drywells associated with tank 241-A-102 were requested to be monitored with the neutron probe on January 27, 1989, and were completed January 31, 1989.

6. The neutron scans were evaluated by TFSA&S, who determined that no change in soil moisture was observed.

7. Tank 241-A-102 was interim isolated prior to meeting stabilization criteria, i.e., less than 5,000 gallons of supernatant. There is no documentation available to support the interim isolation. Single-shell Tank Process Engineering will define the plans to pump the tank.
Action: SSTPE Due: April 1, 1989 Completed July 17, 1989

8. Pumping operations were initiated on July 17, 1989. The pump was shut down on July 19, 1989. Approximately 39,500 gallons have been pumped to Double Shell Tank 241-AN-101 since pumping commenced.

9. An evaluation of in-tank photographs will be made to determine if the stabilization criteria have been met, or if further pumping is necessary. Action: SSTPE Due: September 15, 1989

9. IS FURTHER EVALUATION AND/OR CORRECTIVE ACTION NECESSARY? YES: [X]
NO: [ ]

IF YES, BEFORE FURTHER OPERATION? YES: [ ]
NO: [ ]
N/A: [X] Tank is deactivated

IF YES, BY WHOM?: SSTPE

WHEN?: Evaluation of in-tank photographs. Due: 9/15/89

---

10. FINAL EVALUATION AND LESSONS LEARNED:

Underway

---

11. CORRECTIVE ACTION TAKEN: X

Tank 241-A-102 is being pumped for tank stabilization.

CORRECTIVE ACTION RECOMMENDED:

TO BE SUPPLIED:

DESCRIPTION:

---

12. PROGRAMMATIC/PROJECT COST AND SCHEDULE IMPACT:

N/A

---

13. IMPACT UPON NATIONAL CODES AND STANDARDS, INCLUDING NE STANDARDS:

N/A

---

14. SIMILAR UNUSUAL OCCURRENCE REPORT NUMBERS:

WHC-UOR-88-029-TF-04
WHC-UOR-88-034-TF-05
WHC-UOR-88-028-TF-03

15. SIGNATURES:

ORIGINATOR: [signature] 1340 DATE: 7/28/89
TITLE: Engineer, TFSA&S

APPROVED BY: [signature] 1340 DATE: 7-28-89
TITLE: Manager, TFSA&S

APPROVED BY: [signature] DATE: 7-28-89
TITLE: Manager, Defense Waste Management and Site Support QA

APPROVED BY: [signature] DATE: 7/28/89
TITLE: Manager, Nuclear Facility Safety

APPROVED BY: [signature] DATE: 7/31/89
TITLE: Manager, Tank Farms

APPROVED BY: [signature] DATE: 7/31/89
TITLE: Manager, Defense Waste Management Division

APPROVED BY: [signature] DATE: 7-25-89
TITLE: Manager, Environmental Assurance

CLASSIFICATION: [signature] X UNCL X NOT UCNI

DATE: 7/31/89

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

August 1, 1989

8954397

Mr. G. J. Bracken, Acting Director
Waste Management Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Bracken:

INTERIM UNUSUAL OCCURRENCE REPORT, WHC-UO-89-009-TF-03

The attached Interim Unusual Occurrence Report, "Surface level measurement decrease in single-shell tank 241-A-102," documents an event in which a single-shell tank is being pumped to the double-shell tank system.

Pumping was initiated on July 17, 1989. Approximately 39,500 gallons have been pumped to date.

The event has no programmatic impact. Public Health and Safety are not affected.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

H. F. Daugherty, Manager
Defense Waste Management Division

bmh

Attachment

DOE-HQ - Director, Quality Assurance

DOE-RL - A. W. Kellogg (w/o attachment)
S. K. Moy
A. J. Rizzo

RECEIVED BY
AUG - 3 RECD

HW-K-15-002

EQ-019-003

UNUSUAL OCCURRENCE REPORT

CONTRACTOR: WESTINGHOUSE HANFORD COMPANY

1. REPORT NUMBER: WHC-UO-89-014-TF-04
Reference: TF-EFS-89-021

INITIAL REPORT STATUS: X

INITIAL REPORT DATE: 3/7/89

INTERIM REPORT STATUS: X

INTERIM REPORT DATE: 9/29/89

FINAL REPORT STATUS:

FINAL REPORT DATE:

EVENT/OCCURRENCE DATE: 2/7/89

EVENT/OCCURRENCE TIME: Day shift

DIVISION/DEPARTMENT OR PROJECT: Tank Farm Surveillance Analysis & Support

2. FACILITY, SYSTEM AND/OR EQUIPMENT:

241-A-302-B Catch Tank, 200 East Area

3. SUBJECT OF EVENT/OCCURRENCE:

Surface level measurement decrease in 241-A-302-B Catch Tank.

4. APPARENT CAUSE:

DESIGN:

IDENTIFY:

MATERIAL: X

IDENTIFY: Surface level measurements for Catch Tank 241-A-302-B have shown wide fluctuations since February 1986.

PERSONNEL:

PROCEDURE:

OTHER:

5. DESCRIPTION OF EVENT/OCCURRENCE:

On February 7, 1989, the surface level measurement dropped from 31.75 inches to 0.00 inches (unable to get continuity). The level was rechecked on swing shift the same day, and a surface level reading of 30.00 inches was obtained, which exceeded the 1.50 inch decrease criteria. On February 8, 1989, dayshift, the surface level measurement was 30.50 inches (within criteria limits), but has continued to show some fluctuations.

Due to a variation in surface level measurements, a work request was issued on February 9, 1989, to obtain a solids reading with the manual tape.

A solids level was obtained on February 22, 1989, and the decision was made to issue an Event Fact Sheet (TF-EFS-89-021, February 22, 1989). On March 7, 1989, WHC-UO-89-014-TF-04 was issued.

---

6. OPERATING CONDITIONS OF FACILITY AT TIME OF EVENT/OCCURRENCE:

241-A-302-B catch tank is a 13,558 gallon capacity, inactive isolated underground tank, horizontal eight-foot diameter, 30-foot long between rounded ends. Isolation of the tank has been completed with the exception of the removal of the manual tape, and meets the criteria for declaring an auxiliary tank interim stabilized, as stated in SD-WM-TI-129, "Guideline for Declaring Auxiliary Tanks Interim Stabilized," N. E. Bell, April 10, 1984. Prior to isolation, catch tank 241-A-302-B received miscellaneous drainage from line flushes and rain water accumulation from diversion boxes.

---

7. IMMEDIATE EVALUATION:

A preliminary evaluation of 241-A-302-B catch tank was completed by Single-Shell Tank Process Engineering (SSTPE) on February 28, 1989. The variation in data is thought to be a recurring measurement anomaly that has been occurring for some time. See Action Taken, Item #11(1).

---

8. IMMEDIATE ACTION TAKEN AND RESULTS:

A request was made on February 9, 1989, for TFSO to obtain a sludge level reading. A sludge level measurement of 12.00 inches was obtained on February 22, 1989, indicating there are approximately 18.00 inches (2200 gallons) of liquid in the tank. In-tank photographs could not be obtained due to the lack of photographic port access. There are no drywells associated with this tank.

---

9. IS FURTHER EVALUATION AND/OR CORRECTIVE ACTION NECESSARY? YES: [X]
NO: [ ]

IF YES, BEFORE FURTHER OPERATION? YES: [ ]
NO: [X]
N/A: [ ] Tank is deactivated

IF YES, BY WHOM?: SSTPE

WHEN?: March 1, 1990

---

10. FINAL EVALUATION AND LESSONS LEARNED:

Underway.

---

11. ACTION TAKEN:

(1) The tank was placed under continued monitoring for six months. The surface level measurement has remained stable at 30.00 inches, ± 0.25 inches, since TFSA&S established a temporary baseline of 30.00 inches on March 1, 1989. There is no indication of a tank leak.

(2) A work order was issued March 21, 1989 (2E-89-0059) for sampling of the liquid in Catch Tank A-302-B, and is presently in planning/scheduling.

CORRECTIVE ACTION RECOMMENDED:

Tank 241-A-302-B should be declared interim stabilized. Isolation has been completed with the exception of the removal of the manual tape. The tank meets the criteria for declaring an auxiliary tank interim stabilized. These criteria are specified in SD-WM-TI-129, "Guideline for Declaring Auxiliary Tanks Interim Stabilized," N. E. Bell, April 10, 1984.

In stabilizing an auxiliary tank the only consideration is the supernate liquid and the method required to pump the tank, via underground route, overground route, or tank truck. There is no underground route available to pump this tank. The diversion box, 241-A-152, associated with the catch tank, has been isolated and is not accessible. An overground route is not practical, and there is no approved waste receiver tank truck to transport the supernate to a double-shell tank. Document SD-WM-TI-129 allows up to 5,000 gallons of liquid to remain in an auxiliary tank if it is considered technically or economically unreasonable to remove the liquid. 241-A-302-B contains 2,200 gallons of supernate.

The feasibility of obtaining an in-tank video will be determined.

Action: SSTPE Due: December 1, 1989

---

12. PROGRAMMATIC/PROJECT COST AND SCHEDULE IMPACT:

N/A

---

13. IMPACT UPON NATIONAL CODES AND STANDARDS, INCLUDING NE STANDARDS:

A-6000-373(EF) WEF015
UNUSUAL OCCURRENCE (CRITIQUE) REPORT

N/A

14. SIMILAR UNUSUAL OCCURRENCE REPORT NUMBERS:

OR#
ARCO 77-58
ARCO 77-65

15. SIGNATURES:

ORIGINATOR: ____________ **DATE:** 10-4-89
TITLE: Engineer, TFSA&S

APPROVED BY: ____________ **DATE:** 10-3-89
TITLE: Manager, TFSA&S

APPROVED BY: ____________ **DATE:** 10-6-89
TITLE: Manager, Defense Waste Management and Site Support QA

APPROVED BY: ____________ **DATE:** 10/7/89
TITLE: Manager, Nuclear Facility Safety

APPROVED BY: ____________ **DATE:** 10/9/89
TITLE: Manager, Tank Farms

APPROVED BY: ____________ **DATE:** 10/9/89
TITLE: Manager, Defense Waste Management Division

APPROVED BY: ____________ **DATE:** 10-9-89
TITLE: Manager, Environmental Assurance

CLASSIFICATION: R S Van der Cook x **UNCL** x **NOT UCNI**
DATE: 10-10-89

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

October 12, 1989 8956036

Mr. R. E. Gerton, Director
Waste Management Division
U. S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

INTERIM UNUSUAL OCCURRENCE REPORT, WHC-UO-89-014-TF-04

The attached Unusual Occurrence Report, "Surface level measurement decrease in 241-A-302-B catch tank," documents an event in which the surface level measurement decrease criteria was exceeded. Single-Shell Tank Process Engineering conducted an integrity evaluation and attributed the decrease to a recurring measurement anomaly. The collective conclusion is that the tank is not leaking. The surface level measurement has remained stable since March 1989.

The increased monitoring will continue until administrative stabilization is completed during FY90.

The event had no programmatic impact. Public Health and Safety were not affected.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

H. F. Daugherty, Manager
Defense Waste Management Division

bmh

Attachment

DOE-RL - A. W. Kellogg (w/o attachment)
S. K. Moy
A. J. Rizzo

RECEIVED BY
OCT 16 RECD

UNUSUAL OCCURRENCE REPORT

CONTRACTOR: WESTINGHOUSE HANFORD COMPANY

1. REPORT NUMBER: WHC-UO-89-023-TF-05

INITIAL REPORT STATUS: X — INITIAL REPORT DATE: 5/18/89
Ref: TF-EFS-89-047

INTERIM REPORT STATUS: — INTERIM REPORT DATE:

FINAL REPORT STATUS: X — FINAL REPORT DATE: 8/23/89

EVENT/OCCURRENCE DATE: 5/9/89 — EVENT/OCCURRENCE TIME: 1300 hrs

DIVISION/DEPARTMENT OR PROJECT: Tank Farm Surveillance Analysis & Support

2. FACILITY, SYSTEM AND/OR EQUIPMENT:

241-AX-102, AX Farm, 200 East Area

3. SUBJECT OF EVENT/OCCURRENCE:

Surface level measurement decrease in single-shell Tank 241-AX-102.

4. APPARENT CAUSE:

DESIGN:

IDENTIFY:

MATERIAL:

IDENTIFY:

PERSONNEL:

PROCEDURE:

OTHER: The decrease has been attributed to tank contents settling after tank pump down. Pumping commenced 8/12/88, and was completed 8/25/88.

5. DESCRIPTION OF EVENT/OCCURRENCE:

On 5/8/89, at 1300 hours, the weekly manual tape surface level measurement of 12.00 inches was entered into the CASS, thus exceeding the 1.00 inch decrease criteria from the established baseline of 13.25 inches. TF-EFS-89-047 was issued 5/10/89, and on 5/18/89, the decision was made to issue WHC-UO-023-TF-05.

6. OPERATING CONDITIONS OF FACILITY AT TIME OF EVENT/OCCURRENCE:

Assumed leaker, interim stabilized, interim isolated. 17,000 gallons drainable liquid, 3,000 gallons supernatant and 3,000 gallons pumpable liquid remaining.

7. IMMEDIATE EVALUATION:

In-tank photograph comparisons (photos taken 9/2/88 and 6/4/89) by Single-shell Tank Process Engineering, determined that tank 102-AX has been pumped down to an exposed solids level with isolated puddles visible. There appears to be some drying of the surface and the puddles are smaller in the more recent photographs taken 6/4/89. The surface level measurement device is not visible in either set of photographs. This occurrence appears to be of a similar nature as previously reported in TFSO-EFS-88-092 and WHC-UO-88-029-TF-04, when the integrity of Tank 241-AX-102 could not be determined with a confidence level of 95%, and the decrease in the surface level measurement could not be attributed entirely to evaporation.

8. IMMEDIATE ACTION TAKEN AND RESULTS:

Drywell data was reviewed and radiation profiles are stable.

Leak detection pit data for Tank 241-AX-102 was reviewed and the liquid level and radiation levels have been maintained within criteria limits. The surface level measurement has remained stable since 5/1/89, ranging from 12.00 to 12.25 inches.

9. IS FURTHER EVALUATION AND/OR CORRECTIVE ACTION NECESSARY? YES: [ ]
NO: [X]

IF YES, BEFORE FURTHER OPERATION? YES: [ ]
NO: [ ]
N/A: [X] Tank is deactivated

IF YES, BY WHOM?:

WHEN?:

10. FINAL EVALUATION AND LESSONS LEARNED:

Decreases in surface level measurements after a tank has been pumped is a common occurrence due to the settling of solids. Surface level measurement devices are not effective at this time for measuring liquid level decreases in pumped and stabilized tanks. The decrease criteria for the surface level was established as a secondary method for leak

detection for Tank 102-AX. The primary means for leak detection for this tank is provided for by the leak detection pit. Drywells provide an additional means of measuring tank leakage, therefore the decrease criteria should be removed for tanks that have been pumped and stabilized.

Additional justification for removing the decrease criteria is provided in table 2-2 of Waste Storage Tank Status And Leak Detection Criteria, SD-WM-TI-357.

---

11. CORRECTIVE ACTION TAKEN:

The removal of the decrease criteria from Tank 241-AX-102 has been approved. This will be reflected in SD-WM-TI-357 Rev 1, "Waste Storage Tank Status and Leak Detection Criteria," scheduled to be issued September 1989.

CORRECTIVE ACTION RECOMMENDED:

TO BE SUPPLIED:

DESCRIPTION:

---

12. PROGRAMMATIC/PROJECT COST AND SCHEDULE IMPACT:

N/A

---

13. IMPACT UPON NATIONAL CODES AND STANDARDS, INCLUDING NE STANDARDS:

N/A

---

14. SIMILAR UNUSUAL OCCURRENCE REPORT NUMBERS:

UO-88-029-TF-04

15. SIGNATURES:

ORIGINATOR: [signature] DATE: 8/24/89
TITLE: Engineer, TFSA&S

APPROVED BY: RKWELTY DATE: 8-24-89
TITLE: Manager, TFSA&S

APPROVED BY: [signature] DATE: 8-29-89
TITLE: Manager, Defense Waste Management and Site Support QA

APPROVED BY: [signature] for DATE: 8-29-89
TITLE: Manager, Nuclear Facility Safety

APPROVED BY: [signature] DATE: 8/31/89
TITLE: Manager, Tank Farms

APPROVED BY: [signature] for H. F. Dwight DATE: 8/31/89
TITLE: Manager, Defense Waste Management Division

APPROVED BY: [signature] for DATE: 8-29-89
TITLE: Manager, Environmental Assurance

CLASSIFICATION: [signature] UNCL ✓ NOT UCNI

DATE: 9/1/89

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

September 1, 1989 8955042

Mr. R. E. Gerton, Director
Waste Management Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

FINAL UNUSUAL OCCURRENCE REPORT, WHC-UO-89-023-TF-05

The attached Unusual Occurrence Report, "Surface Level Measurement Decrease in Single-Shell Tank 241-AX-102," documents an event in which a single-shell tank continued to show a decrease in the surface level measurement. The decrease in the surface level measurement is attributed to the settling of solids in the tank after the tank was pumped. This tank is interim stabilized, partially isolated, and was previously determined to be an assumed leaker on August 17, 1988. The tank integrity could not be determined with a confidence level of 95%, and the decrease in the surface level measurement could not be attributed entirely to evaporation.

The event had no programmatic impact and Public Health and Safety were not affected.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

B. K. Duckett for H. F. Daugherty

H. F. Daugherty, Manager
Defense Waste Management Division

bmh

Attachment

DOE-RL - A. W. Kellogg (w/o attachment)
S. K. Moy
A. J. Rizzo

RECEIVED
SEP - 6 1989
W.C. ALACONIS

EV-E-07
EQ-001 PN-006-09
PN-006-011

UNUSUAL OCCURRENCE (CRITIQUE) REPORT

CONTRACTOR: WESTINGHOUSE HANFORD COMPANY 1. REPORT NUMBER: WHC-40-89-043-TF-06

INITIAL REPORT STATUS: Complete INITIAL REPORT DATE: September 5, 1989

INTERIM REPORT STATUS: INTERIM REPORT DATE:

FINAL REPORT STATUS: FINAL REPORT DATE:

EVENT/OCCURRENCE DATE: Historical Event Declared August 15, 1989. UOR declared August 24, 1989 EVENT/OCCURRENCE TIME: N/A

DIVISION/DEPARTMENT OR PROJECT: Defense Waste Management

2. FACILITY, SYSTEM AND/OR EQUIPMENT:

241-AW Tank Farm and 242-A Evaporator

3. SUBJECT OF EVENT/OCCURRENCE:

Significant Tank Farm Ammonia Releases

4. APPARENT CAUSE:

DESIGN:

IDENTIFY:

MATERIAL:

IDENTIFY:

PERSONNEL: Slow response to CERCLA reporting requirements and erroneous identification of dangerous waste chemical form.

PROCEDURE:

OTHER:

5. DESCRIPTION OF EVENT/OCCURRENCE:

Airborne ammonia and liquid ammonium hydroxide discharge in excess of daily CERCLA RQ's have been expected to occur as a result of routine Tank Farm operations. These releases have been anticipated, and are being reported on an annual basis. In late 1988, Westinghouse started implementing proposed EPA rule changes that defined a statistically significant release. During review and analysis of CY-88 data (following discussions with WDOE), it was discovered that the liquid discharge to

216-A-37-1 Crib was primarily dissolved ammonia gas rather than the previously anticipated ammonium hydroxide form. This occurs because of the high pH of the discharge which enhances the relative concentration of ammonia. The dangerous waste limit is a factor of ten lower for dissolved ammonia gas than for ammonium hydroxide. Therefore, waste discharge concentrations have been recalculated and a statistical analysis performed to assess significance. Results of this analysis are as follows:

Exhaust Stack 296-A-27 (airborne Ammonia)

CY-88 Four statistically significant CERCLA RQ releases.

CY-89 No statistically significant releases.

Crib 216-A-37-1 (dissolved Ammonia)

CY-88 Fourteen statistically significant CERCLA RQ releases.

Seventeen releases in excess of dangerous waste concentration limits. (Based on equivalent concentration summation of all waste constituents)

CY-89 One statistically significant CERCLA RQ release.

Five releases in excess of dangerous waste concentration limits. (Based on equivalent concentration summation of all waste constituents)

---

6. OPERATING CONDITIONS OF FACILITY AT TIME OF EVENT/OCCURRENCE:

Operating

---

7. IMMEDIATE EVALUATION:

Reporting to DOE-RL, DOE-HQ, EPA and WDOE is required.

---

8. IMMEDIATE ACTION TAKEN AND RESULTS:

Verbal reporting to DOE-RL completed August 15, 1989. Written reporting to DOE-RL completed September 1, 1989. This completes WHC reporting obligation.

---

9. IS FURTHER EVALUATION AND/OR CORRECTIVE ACTION NECESSARY? YES: [X]
NO: []

IF YES, BEFORE FURTHER OPERATION? YES: [X] 242-A Evaporator
NO: [X] 241-AW Tank Farm*

IF YES, BY WHOM?: Defense Waste Engineering

WHEN?: 241-AW prior to Purex restart
242-A prior to evaporator restart (estimated late 1990)

*Corrective action 1 must be completed for 241-AW prior to receipt of ammonia bearing waste from PUREX.

---

10. FINAL EVALUATION AND LESSONS LEARNED:

To be included in final report.

---

11. CORRECTIVE ACTION TAKEN: Pending

CORRECTIVE ACTION RECOMMENDED:

1. For both facilities, develop procedures for identification of ammonia species in discharge and for rapid statistical analysis of ammonia releases to permit timely reporting.

2. For 242-A only, change operating procedures or add treatment processes to maintain ammonia discharges below dangerous waste concentration limits.

TO BE SUPPLIED:

DESCRIPTION:

---

12. PROGRAMMATIC/PROJECT COST AND SCHEDULE IMPACT:

Unknown. Future evaporator condensate treatment system may require special provisions to mitigate ammonia discharge.

---

13. IMPACT UPON NATIONAL CODES AND STANDARDS, INCLUDING NE STANDARDS:

None

---

14. SIMILAR UNUSUAL OCCURRENCE REPORT NUMBERS:

WHC-UO-87-010-PUREX-01

15. SIGNATURES:

ORIGINATOR: _____ DATE: 9/5/89
TITLE: R. J. Nicklas

APPROVED BY: _____ DATE: 9/6/89
TITLE: G. L. Dunford

APPROVED BY: _____ DATE: 9/6/89
TITLE: R. J. Baumnardt

APPROVED BY: _____ DATE: 9/7/89
TITLE: P. R. Praetorius

APPROVED BY: _____ DATE: 9-7-89
TITLE: L. P. Diediker

APPROVED BY: _____ DATE: 9-8-89
TITLE: A. R. Schade

APPROVED BY: _____ DATE: 9/8/89
TITLE: H. F. Daugnerty

APPROVED BY: _____ DATE: 9/8/89
TITLE: R. W. Sudmann

DOES NOT CONTAIN CLASSIFIED OR
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

September 8, 1989

8955338

Mr. R. E. Gerton, Director
Waste Management Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Gerton:

INITIAL UNUSUAL OCCURRENCE REPORT, WHC-UO-89-043-TF-06

The attached Unusual Occurrence Report, "Significant Tank Farm Ammonia Releases," documents events in which ammonia was discharged to the 216-A-37-1 Crib in concentrations exceeding dangerous waste concentration limits. In addition, several statistically significant Comprehensive Environmental Response Compensation & Liability Act (CERCLA) releases occurred.

Public Health and Safety were not affected. Programmatic impact is currently unknown, as future evaporator condensate treatment systems may be found to require special provisions to mitigate ammonia discharges.

This report has undergone a classification and Unclassified Controlled Nuclear Information (UCNI) review and the report is satisfactory for public release.

Very truly yours,

R J Baumhardt

for H. F. Daugherty, Manager
Defense Waste Management Division

gc

Attachment

DOE-RL - A. W. Kellogg (w/o attachment)
S. K. Moy
A. J. Rizzo

RECEIVED BY
SEP 12 RECD